
# MONTANA AERONAUTICS COMMISSION

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## *Hansen New Flying Farmer President*

Montana Flying Farmers and Ranchers held their annual fall meeting in Conrad, October 6th.

Ermal Hansen, Fort Benton, was elected President; Earl Keister, Conrad, Vice-President; and Rosella Tempero, Secretary, for the coming year.

Mrs. Warren Jones, was elected Queen for the year. New Directors are, Henry Wood, Gildford and Woody McCracken, Conrad.

In attendance at the meeting was Walter Ross International President of the Flying Farmers.

Bernie Geier, FAA Safety Agent from Billings was banquet speaker.

## FAA PLANS NEW RECORDS SYSTEM

Leighton Collins, editor, Air Facts writes: "The FAA is planning a new records system in order to more effectively keep track of pilots and ground personnel and their current skills. To bring its records up to date the FAA plans to require the holder of a certificate to renew it during the two years after the program is launched, which will probably be next year.

Renewal would be done by application with no examination involved. The new certificate would be valid for two years, and could be renewed through the mail, without examination, any time up to two years after it expired. For pilots, renewal would be automatic when passing the physical examination.

Further, the FAA plans for certificates of the future to be small plastic cards, similar to credit cards, with all the airman's certificated privileges and medical certificate on the card. The old familiar license numbers will be dropped, and the new cards will bear the holder's Social Security number.

The new program is being launched because licenses are now good for an indefinite time and all 1,800,000 that have been issued since 1926 are still in the files."

## *Second Montana Flight Instructors Course Planned*

Preliminary plans for Montana's second Flight Instructors Refresher Course are being made by Montana Aeronautics Commission and Montana Aviation Trades Association representatives.

The Course will be similar to a highly successful course held last March in Great Falls.

Twenty Montana Flight Instructors will attend the ten day Course, March 4 to 13.

Emphasis will be on how to teach flight maneuvers, air traffic control, instruments, meterology and related flying subjects.

Application blanks will be available the first part of January.

October 11, 1941—Civil Aeronautics Board amends Civil Air Regulations to require certification of every pilot and aircraft in the U.S. regardless of whether or not they are engaged in commercial activities.

## CALL HOME

Why not make a phone call home when you decide to remain overnight (RON) at someplace other than your planned destination?

The Montana Aeronautics Commission has spent a good deal of money and time recently tracking down pilots reported missing by anxious wives.

After many phone calls checking here, there and everywhere, the missing one is found, either enjoying a good night's sleep or living it up in some town other than his supposed destination.

We are against neither a good night's sleep or a good time, but the search for persons so indulging is raising h——with our participation in such activities.

In addition, it is causing the state a good deal of money, plus turning some wives 'hair grey.'

Scheduled airlines throughout the world (except those of the U.S.S.R. and Red China) operate approximately 150,000 flights a day—or 6,250 flights per hour, 104 per minute or 5 every three seconds.

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ARTCRAFT PRINTERS

## Montana Trunk Sets Record

ST. PAUL—Northwest Orient Airlines today said it had accomplished a record on-time performance of 85.4 per cent in July.

Information was included in official report submitted this week to the Civil Aeronautics Board. The figure related to all NWA flights scheduled between the top 100 city-pairs on domestic routes. This is the segment of each trunk airline's operations utilized by the C.A.B. in determining on-time performance.

In July, 85.4 per cent of all NWA flights scheduled in these top 100 markets were completed within 15 minutes of scheduled arrival. The performance was up from June, when Northwest was third among the 11 trunk airlines with a 77.6 per cent figure. The two carriers with better June results than Northwest had 79.6 and 77.7 per cent, respectively. Inasmuch as airlines are not required to file these performance reports with the C.A.B. until the 15th of the second month following, other carriers' percentages relating to July operations probably won't be available until mid-September.

In terms of flights in the 100 city-pairs that reached scheduled destination, Northwest improved its performance over that of June, when it was best in the industry. In July only 8/10's of 1 per cent of all Northwest's flights scheduled were cancelled, stopped short of destination, or overflew destination. In June, the figure was 1.2 per cent, a lower percentage than that recorded by any of the 10 other trunk airlines.

The airline serves Billings, Great Falls, Bozeman, Butte, Missoula and Helena.

## "FAA Certified Audio-Visual Courses"

As the result of recent evaluations conducted by the Federal Aviation Agency, the following audio-visual aids courses may be used as a part of basic or advanced ground school curricula required for pilot ground school certification, under prescribed conditions: Aviation Industry Relations Company (AIRCO), Chicago, Illinois — AIRCO Ground School Training Program for Private Pilots; A. V. Company, Denver, Colorado — Private-Commercial Training Course; Sanderson Films, Inc., Wichita, Kansas— Pre-flight Facts, FAA Regulations, Navigation, Radio Navigation, Flight Computer, Meterology.

The prescribed conditions under which any of these courses may be used are as follows:

These courses may be used in lieu of an equal amount of classroom instruction, e.g., a complete course of 35 hours of audio-visual instruction may be credited as 35 hours of the prescribed basic or advanced ground school curricula.

Certificated ground instructors with basic or advanced ground instructor ratings, or with ratings for the subjects taught, or certificated flight instructors may conduct these courses.

When an audio-visual course is conducted by a flight instructor, all procedures provided with the course shall be observed, including the use of the study guides, instructor manuals, and examinations furnished.

If a certificated ground instructor, rated in accordance with condition two, uses audio-visual courses, he may use texts of his own selection and conduct examinations of his own making.

Each certificated ground school operator using one of these courses shall be responsible to see that it is current, accurate, and contains all revisions furnished by the producer.

The use of audio-visual instruction by a flight instructor in lieu of a portion of the standard ground school curriculum prescribed by Federal Aviation Regulations Part 141 (Civil Aeronautics Manual 50) requires the submission of a special curriculum for approval by the local FAA General Aviation District Office in accordance with FAR sections 141.47 and 141.49 (CAM sections 50.11-1 and 50.11-2). It is preferred that a specific instructor, or instructors be designated by the school for this purpose, to avoid inconsistent, contradictory, or irresponsible instruction. No special approval is required for the use of audio-visual aids by a certificated ground instructor.

The use of a certificated flight instructor for the audio-visual portions of a ground school curriculum does not relieve a ground school of the principal ground instructor requirement of Federal Aviation Regulations section 141.45 (Civil Air Regulations section 50.10c).

Flight Standards Service Release No. 472.

## Instrument Pilot Exam-O-Gram No. 1

Reports from Controllers and Operations Inspectors indicate the need for more thorough understanding of approach and landing procedures by applicants for the Instrument Pilot Rating. Where radar is available, the pilot can become especially negligent about his own responsibilities. How would you cope with the following situation?

You are flying a light twin on an IFR flight plan to Lambert-St. Louis Airport, Mo. Your radio equipment includes two VHF transmitters, two omni receivers (108.0-126.9 mc.), an ADF receiver, and a marker beacon receiver. Prior to arrival at your clearance limit (STL VORTAC), you are cleared for an ILS approach to Lambert-St. Louis Airport, runway 24. Approach Control vectors you from the St. Louis VORTAC to the localizer course for a straight-in approach

to runway 24 (see Approach and Landing Charts on reverse side of this sheet). St. Louis weather is 500-1, wind 200°/10 kts. Approaching the Outer Compass Locator inbound, you are advised that the ceiling and visibility are now 400-1, wind 140°/20 kts., landing runway 12.

1. UNDER THE WEATHER CONDITIONS FIRST REPORTED, WERE YOU EQUIPPED FOR AN ILS APPROACH TO RUNWAY 24?

Yes. With either VOR Receiver you can utilize the localizer course.

2. WHAT ARE YOUR MINIMUMS FOR AN ILS APPROACH TO RUNWAY 24?

Straight-in minimums are 200-½ (day minimums, over 65 kts., 2-eng. or less). However, though cleared for a straight-in approach, you are not equipped with a glide-slope receiver. Thus your minimums are higher, 400-1.

3. HOW HAS THE WEATHER CHANGE AFFECTED YOUR MINIMUMS?

Though the ceiling is not below your straight-in minimums, you must now circle to land on runway 12. The circling minimums to runway 12 are 500-1; with the ceiling reported at 400 feet, you cannot complete a circling approach to runway 12 or a straight-in approach to runway 24.

4. WHAT IS YOUR CORRECT COURSE OF ACTION ON RECEIPT OF THE LAST WEATHER REPORT?

a. Execute a missed approach and request clearance to your alternate, or

b. Request a radar vector for a VOR approach to runway 12. The AL chart lists 400-1 as straight-in minimums for aircraft **equipped with dual omnis** and receiving St. Charles Intersection. If you are faced with deteriorating weather and/or prolonged holding, request clearance to your alternate.

5. DOES THE ACCEPTANCE OF A RADAR VECTOR AFFECT THE PRESCRIBED MINIMUMS?

No. It is the pilot's responsibility to determine whether approach and landing are authorized under existing weather conditions. You are informed of local weather conditions whenever the ceiling and visibility are at or below the highest circling minimums for the airport. If you violate the authorized minimums, the responsibility is your own.

## Periodic Inspection Visual Indicator

**Lee C. Mills—General Aviation Inspector, Helena, Montana**

In response to a desire by the public for a visual reminder of the periodic inspection due date, the FAA has developed a visual indicator for this purpose.

These reminder stickers have been distributed to authorized inspectors and repair stations. We have asked that they be used at the time of the airworthiness inspection. To determine the month and year when the next periodic inspection becomes due, reference will be made to the aircraft records and the indicator perforated accordingly. The indicator may be affixed at any location which would least obstruct the visibility of the pilot.

| PERIODIC INSPECTION VISUAL INDICATOR | | | | |
|---|---|---|---|---|
| 1963 | 1964 | 1965 | 1966 | 1967 |
| JAN. | | | | JULY |
| FEB. | | | | AUG. |
| MAR. | | | | SEPT. |
| APR. | THE PERFORATIONS INDICATE THE MONTH AND YEAR THE NEXT PERIODIC INSPECTION OF THIS AIRCRAFT BECOMES DUE, AS REQUIRED BY CIVIL AIR REGULATIONS. | | | OCT. |
| MAY | | | | NOV. |
| JUNE | | | | DEC. |

Use of this sticker is not mandatory, but will serve to remind the aircraft owner, operator or pilot, of the month and year in which the periodic inspection again becomes due. The standardized use of such a reminder for which there is no charge should minimize the inadvertent operation of an aircraft contrary to periodic inspection time requirements.

Lost or destroyed indicators may be replaced by contacting an inspection facility or an FAA inspector.

### 1962 Survey of Maintenance Airman

This is to notify the aviation community of a forthcoming FAA survey of the activities and utilization of all certificated mechanics and authorized inspectors. The survey will start on November 1 and extend through November 30, 1962.

The survey is to be conducted strictly on a voluntary basis and is directed to certificated maintenance airmen in all segments of the aviation community. This includes certificate holders who are not currently working in aircraft maintenance and military personnel holding civil maintenance airman certificates.

This information is needed in order to determine the number of active certificate holders, industry utilization of these airmen, the types of equipment they work on or their other duties or activities. Information sought is similar to that which will be obtained from the Agency's proposed conversion program for all airman certificates. Since full data from this program will not be available until July, 1965, all certificated maintenance airmen are asked to participate in the present survey.

Questionnaire forms may be obtained from any FAA General Aviation District Office. In addition, forms have been mailed to various fixed base operators within the Helena district.

It is requested that the forms be completed and mailed by November 30. No postage is necessary.

October 16, 1921—Aero Club of America holds meet at Curtiss Field, Garden City, L. I.

## General Flying Problems

**Address by Grover Loening before International Northwest Aviation Council, Idaho Falls, October 9, 1962:**

The problems that arise in aviation development cover so broad a field, military and civil, that in the interest of brevity we must restrict ourselves, in this instance, to those particular phases of aviation that this Council is most concerned with. Airlines and their troubles, the military field and its complexities have a bearing on our thoughts, to be sure, but not as vital and current as the problems involved in local air traffic, general and private aviation activities, airport facilities and development in the smaller communities, and the various prospects for growth in usage of aircraft as a personal vehicle.

Some 80,000 privately owned aircraft, distinct from airline transportation aircraft (of which there are less than 2,000), are operating in the United States. These aircraft in the year 1962 will pile up about 13½ million flying hours and total almost 2 billion miles of flying. Ten years ago, about half as many aircraft flew just over 8 million flying hours, a distance of 970,000 miles. The growth is impressive, but not explosive. Last year some 7,000 utility aircraft (meaning private, general, and personally used aircraft) were delivered, and this small number of units was more or less the same as had been delivered, in the previous five years. When we consider that the delivery of utility and private vehicles in the automobile field last year totals 1,000 times as much as this, we arrive at two conclusions: First, our private and general aviation development is not really growing very much; and second, if we can remove by development whatever hinders the use of this mode of travel as a private vehicle for all manner of personal and business uses, we can reach a market 1,000 times greater than what we now have!

What are those hindrances?

The first one, without a doubt, is too much Federal regulation. Where would our gigantic automobile industry be if it had to operate under a Federal Automobile Agency that excused gigantic bureaucratic growth on a deliberate policy that the government had to protect everyone against both himself and everyone else at the same time? To be sure, 40,000 people a year are killed by automobiles, but also to be sure, quite a few jump out of windows or slip in bathtubs.

The whole idea of government regulation of private enterprise transportation starts out with two questionable assumptions, particularly as far as aviation is concerned.

The first is the assumption that the prospective buyer knows so little about aircraft that he needs the protection of a benevolent government to keep him from making the grievous mistake of buying a death trap. This may have been true many years ago, before the war, when knowledge of aviation was limited to a small coterie of airmen, but it is not true today. During the war the ubiquitous use of flying caused us to develop, in this country alone, some 400,000 skilled aviators, and at least 3,000,000 men trained either in the enlisted personnel of the Armed Services, or in the enormous trained personnel of the huge war-time aircraft industry. Every prospective purchaser of an airplane would surely have a son or a nephew or a friend or an associate, who would probably be expert to the tune of several thousand hours of flying, to look over his choice of a new aircraft and tell him how good it was.

The other false assumption upon which the present regulatory practices for certification are based is that the constructor is so poorly informed on air technique and aircraft engineering that he needs a handbook from the government to tell him how to build his new aircraft. This, at the present time, is equally ridiculous, because there is an enermous mass of highly trained technicians, stress analysts and experienced mechanics available today to make anything less than expert workmanship in aircraft a joke that most everyone could see at a glance.

With these two false assumptions as the basis for this process of certification of aircraft, we have deliberately thrown into the path of the ambitious designer, hurdles and obstacles, involving great additional expense and time, which could be removed right now with very little if any detrimental effect on our aircraft development. A 5-year moratorium on the requirement of air worthiness certificates by F.A.A. would be safely in order. All of this applies just as pertinently to Jet Air Transport development, and to regulations affecting them.

Right now is the one time in our history when we are fully justified in taking a definite "let the buyer beware" position on all airplanes, and give the designers a completely free hand to make for themselves a greater and more profitable business by placing with them the complete responsibility for developing a successful aircraft or sinking themselves completely into bankruptcy by building a poor one. The public, after only a few painful accidents, would completely reject a phoney or inferior product, as it did in the case of automobiles, time and again.

Automobile development proved that the best stress analysis possible is the survival of the fittest! And in its amazing progress to great perfection, the automobile never had to have a government certification procedure.

This, then, would be the most important way in which the development of advanced and more useful types of aircraft could be done in a far less expensive manner—both to the constructor and to the government.

The next item of Federal regulation that is a great hindrance to enormous utility aircraft usage is Air Traffic Control.

This is not so easily dismissed, by any means.

At 600 mph, two aircraft are passing each other at about half the speed of a bullet. Beyond this, if we envision utility flying going into supersonic regimes, traffic can assuredly not be handled by individual sightings and judgment. There would seem to be right here, the need for a limiting Federal law to the effect that no utility planes are to exceed four or five hundred miles an hour. The air space from 30 to

50,000 feet, and supersonic speeds, can be reserved for airline and military operation under strict Federal regulation of air traffic control (with areas around major airports restricted only to such professional aircraft).

This would not be too much of a hindrance to the development of wide aircraft utility. Fortunately, limiting ourselves by not being permitted to enter this higher and faster air space region, is already on the way to being no hindrance at all, because of the coming great development of VTOL aircraft.

After all, the principal need for air traffic control is the high speed of the least speed at which aircraft can maintain flight. Let us again go to the automobile for comparison. If a car were an airplane, it would be a vehicle with no brakes (flaps and air brakes merely reduce a little the lower speed of flight). So, as your no-brake automobile approaches a red light, it would have to declutch the motor and coast accurately enough to be stopped when it reaches the light. Is not this about what we do on landing? This alone puts a heavy premium on pilot judgment, and it is just why pilots now need so much training, fitness and regulation. In addition to that, if the automobile was in the same family as the airplane, it could not stop and change its mind, or back up. What an impractical vehicle we really have. And it all ends up in an enormous amount of air space being used for holding patterns for air traffic control around airports.

The automobile also, has one important advantage, in the navigation that is done for the car driver by the road, the road signs, the road lights, and the marked division of contrary traffic lanes. Without this, in an unmarked air ocean, aircraft have a great limitation. But do not give up hope on this one. Extensive radar development and electronic guidance systems as well as low altitude marker light systems could be developed if we get at it, to give the airman a road to follow as surely as the car driver. When reference is made to the light system, there is envisioned an extension of the new successful landing pattern alley on approaches that is provided by the airport light approach installations (in which too high or too low an approach get a red light). Systems of lights could be spread across the country to mark airways—white when you are following them—and red when you step over the line and get into the oncoming traffic alley—an extension of our old radio beam and beacons.

Unless we get to work right now on removing some of these fundamental hindrances to vast air vehicle usage, we will remain in our present limited status—which makes the ownership of an aircraft so professional, that it could almost be, like owning a private locomotive. If we cannot surmount the growth of Federal airway regulations (needed because of our imperfect aircraft and instrumentation and pilot proficiency requirement), we will not reach that clearly indicated future where air travel could break through into enormous and wide usage.

Obviously, the first step to remove the limitations we now have is to perfect the vehicle. This means VTOL, or whatever else you wish to call it. It means developing noiseless aircraft as a vehicle that can stop and back up in the air, and hover over a crowded airport, or over a crowded community, in which it can land on its own private parking space—alongside a home, alongside a factory, on the roof of a business building, or alongside a dock. It is extremely important for that part of the industry that members of this Council are engaged in, to keep abreast of the progress made in this development, because if it is successful, it will completely change the entire aspect of general aircraft operations.

Acceptability of an air vehicle on a wide scale will require two features difficult to attain.

The first is to make the noise acceptable.

The second is to make the air blast from vertical-sustaining air forces low enough to be acceptable on ordinary pavements, grass, etc.

As one who has been identified with, and followed the development of Vertical Take-Off and Landing (with a high enough cruising speed to be a money-maker alongside the inevitably slow helicopter), the conclusion has been reached that VTOL development, successful, practical, and not too costly, is at our doorstep.

Much of this development, of course, is being done more or less in secret on military projects. The XC 142 Hiller Temco VTOL Transport will be flying in two years. The Lockheed "Humming Bird" is already flying, the Curtiss-Wright model 200 is rapidly developing—as are many others.

There is a significant first step to show, how much this development will mean to aviation's future, in the fact that, in Europe, in NATO, and in many other quarters, fighter planes operating from any kind of airdrome or airstrip, are now considered completely obsolete. Fighters must be so distributed in the location of their bases that the coming era requires that they land and take off vertically, without any further question. This is actually being done right now, by the Hawker P 1154 VTOL—although you do not hear too much about it.

The military urgency for VTOL will help the approach of our great coming era quite a little.

But there are disadvantages. Development of new products under the necessary military government procurement system takes too long and costs too much—in addition to which, many requirements, like low noise acceptability, so needed for commercial usage and so vital, receive only cursory consideration.

Before we leave contemplating the role of government in the development of your field, you operators, airport developers, sprayers, air taxi firms, etc., must give political vigor, to opposing an ever-growing threat from government competition by government operation in your own field.

Let's start with the military. In the larger aircraft sizes, Air Forces buy jet planes, intended to be run by MATS, to provide pure commercial-type transportation to

service people and their families. This could have been disastrous to unscheduled aircraft operators had the operators and their Congressmen not stepped in with powerful pressure to get direct transportation contracts from MATS.

Now here is where you smaller taxi operators step in and have to get busy. The military are about to purchase purely commercial type small planes for transportation of military personnel between bases and installations — planes that have no military functions whatever, except simple transportation, and a possible limited value for training. There is no reason at all why a vast amount of this flying, however, should not be contracted with air taxi operators. This is a tough one for you as an organization to get busy on, for it could put the taxi business in the black in a hurry. So start now to educate the Air Force to realize what a great reserve strength for war would be found in a large thriving Air Taxi industry.

There is an even further threat from government departments other than military. There is always in a democratic government the empire building temptation of the Parkinson Law Bureaucrats. Their bureaus, departments, divisions, or what not, must grow in importance, let alone in salary. So you will find the Forestry Service flirting seriously with trying to get their own helicopters; the Department of Agriculture itching to do its own spraying; the Department of the Interior, wanting to have its own aircraft for exploration—and so on. The only way to have your business grow great is to stop this tendency at the political source, which is in the appropriation committees of Congress. All commercial activities, according to our Free Enterprise system (that so many politicians give only lip service to), are properly and rightly your business, and not the government's.

Look out you don't lose it.

Don't let the taxes of a starving industry be used by the collectors of these taxes to compete with you and starve you even more.

The old saying that "air-minded is nothing above the eyebrows but air" is unfortunately rather true when we look back at some of the stupid things that are done in aviation. Billions of dollars were spent on airports that had only one runway in a given direction. This was nothing more than a one-track railroad. Are aircraft so uncontrollable that they will swerve off runways when one is landing and another is taking off on a parallel one? Of course they are not, and instances of swerving off runways almost never happen — but years ago many feared this.

In some extra large airports, jet aircraft leave the gate, taxi literally miles for their take off, using fuel at the most extravagant rate, using up time to turn in fancy ways at a gate, etc., all of which could be avoided by a tow immediately after landing. A recent study on the cost of this, made in Miami, showed that the airline operators are pretty empty headed indeed. In many instances it costs $31.63 to taxi from gate breakaway to take off, that it would cost only $1.23 to tow the same ship—and just as fast. And incidently, the passengers and the people in the air concourse would not get those delightful kerosene fumes. Consider this too, in your smaller airport developments, particularly when you start handling little private jets.

Even in new design studies, the stupidities that are generated by habits of conformity, are only too evident. The placing of jet engines in the Boeing 707, DC8, and Convair 880 types far outboard on the wings was a holdever concept required by piston engine propeller clearance that made no sense and is now abandoned in all new designs.

Supersonic Mach 3 aircraft with a reasonable and safe margin of power, will almost surely need more thrust than they have weight.

So how can so many designs be under development right now, in which no thought is given to vertical take off? Millions are already being spent by the FAA with no prime original specified requirement as to take off or noise improvement. Noise is to be handled, by putting the airports so far out of town that it will take you as long to drive in to a city as it would to fly there from 2,000 miles away. And take-off is to be handled by that too easy solution of longer runways. Worse, still, if the supersonic aircraft cannot slow down in the air, below 200 mph, each plane would require 100 square miles in a holding pattern. All of this could be solved by a VTOL hovering configuration in which the thrust that is there anyhow supports the weight. But none or very little of the FAA development funds on SST are aimed in this direction. They will have to be eventually, but why always, these stupid delays?

Another of our hindrances is that, the profit picture on air taxi, airport and service operations is certainly clouded and slim pickings. A more mature advice would be: Don't underprice your charges and your renumerations like the airlines have so unwisely done. Don't ever forget that the object of business is to make money.

The general situation that we face is rather well stated by the Chamber of Commerce of the U.S. a few months ago when, with regard to aviation, it stated: "The present unsatisfactory profit picture in aviation will not improve unless other factors such as increased labor costs, and tax costs, and work stoppages and needless government interference with management, are modified."

So your problems are with you, of which only a few here have been mentioned. But your future is also with you, and it is going to be enormous, particularly if we finally perfect our air vehicle so that we can rise from a small parking space vertically (without waking up the neighbors), and then fly at a speed of at least 400 mph, yet slow down to 5 mph. Able to stop at any time, if the weather gets too thick, or the traffic too heavy, we could wait, if need be, to land literally wherever and whenever we want to.

The next fifty years will be as marvelous as the last fifty, if we but have continued faith, persistence, and ingenuity.

# AIRPORT NOTES

**By JAMES H. MONGER**
**Chief, Airports Division**

### HYSHAM

The Treasure County Commissioners have agreed to sponsor a state-local project at Hysham. The airport to be constructed there will be a general aviation utility airport consisting of one stabilized turf runway 4000 feet long by 75 feet wide with a parking apron and the entire airport boundary being fenced. It is anticipated that all land acquisition and the engineering can be completed this fall with the actual construction taking place next spring.

### EKALAKA

A meeting will be held in Ekalaka on November 5th with the Carter County Commissioners relative to the re-development of their airport. It is assumed that this airport will be reconstructed to meet the standards of the general aviation utility type airport.

### RYEGATE-LAVINA

A meeting will be held with the Golden Valley County Commissioners on Nov. 7th, relative to the proposed airports at Ryegate and Lavina. These general aviation utility airports would be a county-state project. Site investigations have taken place in both areas and engineering will proceed as soon as the county accepts the sponsorship of these projects. As in the case of all general aviation utility airports that are developed within the new policy of the Montana Aeronautics Commission, the limit for each development will be $20,000 with the sponsor in each case, repaying to the M.A.C. over a ten year period, an amount equal to approximately 25 to 50% of the project.

### RAPELJE

A site investigation has taken place at this location and it is assumed that the Stillwater County Commissioners will sponsor an airport development there.

### GREAT FALLS

The Montana Aeronautics Commission has received an airport aid application from the Great Falls International Airport for the purpose of a taxiway lighting system project. This local-state-federal project will cost approximately $191,550, with the M.A.C. loaning $54,000 to aid in the financing of the sponsors share.

A water system project is now under way and is now under construction at this airport. It consists of a new water tank and tower to replace the old wooden one that was damaged last year in a wind storm.

### BILLINGS

The M.A.C. has received an airport aid application from the City of Billings for a water project for Logan Field. This local-state-federal project will consist of constructing a 100,000 gallon water tank and pumping station and water mains. The total estimated cost is $273,000, with the MAC loaning $100,000 to aid in the financing of the sponsors share.

### NEW G.A.U. AIRPORTS

It is hoped that new general aviation utility airports can be established at the following locations: BROADUS, RICHEY, WIBAUX, WINNETT, TERRY.

Site investigations will take place by this office this fall and winter at these locations.

### EAST GLACIER PARK

Site investigations have been conducted by this office in the East Glacier area for the purpose of determining a location for a new airport. This airport would serve as the gateway to Glacier Park as well as an alternate airport for the VFR route through Marias Pass. The FAA has been asked to conduct their own site investigation for this area, also, in the event Federal matching funds could be utilized on the proposed project. Airlines have indicated that they would be interested in serving this area.

### FORSYTH

A runway re-construction project now under way on the Forsyth runway. The Rosebud County maintenance crews have re-graded, sealed and chipped the east-west runway.

### WEST YELLOWSTONE

An inspection trip was conducted on October 19, 1962, on the engineering at the location of the new airport at West Yellowstone.

**Jim Monger and Director Lynch inspect engineering work at West Yellowstone.**

Among those attending were Charles A. Lynch, Director of Montana Aeronautics Commission, James Monger, Chief, Airports Division, Vic Keisling of the FAA, Helena, Worthy Rooshure and John Beer of Wenzel & Co., Consulting Engineers of Great Falls.

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**FOR SALE: Piper Clipper 4 place, 1500 hrs. on air frame, 370 hrs. since major, 20 hrs. since periodic in March, LF trans.-rec., needle and ball stall indicator, excellent condition throughout. Price $2500. Contact Mr. Eugene Mehl, Plentywood, Mont., RR No. 2.**

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**FOR SALE: Cessna 180, clean, well maintained, late paint job, new matching upholstry, headliner and rug, numbers on side. LTRA 6 Lear radio with omni. Phi Tilmm, Polson, Mont.**

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**FOR SALE: Piper PA 12, new covering glass, interior and major 250 hrs. back,500 total time on fuselage, numbers on side, Hallicrafter transceiver. Contact Phil Timm, Airport, Polson, Mont.**

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Nov. 23, 1909 — Aero Club of America sets rules governing the licensing of aviators.

## DEAD-STICK FOUR-POINT

Scientists have been studying the aerodynamics of how flies land on ceilings. Using high-speed photography, William G. Hyzer, a Wisconsin researcher, has come up with answers to the questions of whether the average fly directly approaches the ceiling upside down or whether it comes in right side up and goes into a last-second half-roll. The results were published in a recent issue of Science, a semi-technical publication of the American Association for the Advancement of Science.

For those who care, here is what a typical fly's landing on the ceiling involves: The fly approaches the ceiling in a near-vertical fashion at a little more than a half mile an hour. At about one body's length away, it cuts its wing power and thrusts all six legs forward. The two cushioned forefeet take the initial impact, and the fly hunches its body forward to bring the other four legs onto the ceiling. You might call the whole thing a dead-stick two and four-point landing.

There are variations. One fly did go into a kind of rolling motion, or "cartwheel" before touching down.

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He drained the oil
And put in some new,
And then forgot
To tighten the screw.
The oil seeped out,
The engine did fail
They're hunting him now
On the old mountain trail.
(Idaho Rudder Flutter)

November 6, 1915—Lt. Comdr. H. C. Mustin makes first catapult launching from a vessel under way from U.S.S. North Carolina in Pensacola Bay.

November, 1906—Aero Club of America, with 300 members interested in ballooning, is founded with headquarters in New York City.

Nov. 23, 1910—Octave Chanute dies at his home in Chicago at the age of 78 years.

1911—Six aeroplanes are delivered to the Army this year and Miss Harriet Quimby is the first woman licensed pilot in America; is also first woman to fly across English Channel.

November, 1913 — Glenn L. Martin sets an altitude record for pilot with passenger of 9800 ft.

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